

## **TECHNIQUES FOR USING EDGE MASKS TO PERFORM TIMING ANALYSIS**

### **ABSTRACT OF THE DISCLOSURE**

**[0085]** Techniques are provided for more efficient timing analysis of user designs for programmable ICs. Initially, a graph is created that represents nodes and edges in a user design. Each edge in the graph is assigned a binary edge mask, each bit of which indicates whether it is reachable from a source or destination type relevant to user specified timing constraints. A timing analysis tool then performs multiple depth-first search operations to compute delays along time critical paths relevant to the user specified timing constraints. Because each edge contains an edge mask to indicate whether it connects to a particular source or destination point, the timing analysis tool does not analyze areas of the graph that do not lead to a relevant source or destination point. These techniques prevent the timing analysis tool from analyzing paths in the graph that are not relevant to the analysis of the time critical paths.

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